

What is claimed is:

1. A CVD apparatus that supplies semiconductor material gas to a reaction chamber in which a wafer is placed to form a semiconductor film on said wafer; wherein, together with connecting a material gas supply path that supplies said semiconductor material gas, an inert gas supply path that supplies inert gas for purging, and a high thermal conductivity gas supply path that supplies gas such as hydrogen or helium having a high coefficient of thermal conductivity that mixes with purge gas, to said reaction chamber, a moisture meter, which measures the amount of moisture in gas exhausted from the reaction chamber, and a vacuum pump for evacuating the inside of the reaction chamber, are provided.

2. A purging method of a CVD apparatus that supplies semiconductor material gas to a reaction chamber in which a wafer is placed to form a semiconductor film on said wafer; wherein, a gas, comprising a mixture of a gas such as hydrogen or helium having a high coefficient of thermal conductivity and an inert gas, is used as the purge gas used during heated flow purging treatment.

3. A purging method of a CVD apparatus that supplies semiconductor material gas to a reaction chamber in which a wafer is placed to form a semiconductor film on said wafer;

wherein, prior to semiconductor film formation after placing the wafer in the reaction chamber, the pumping of a vacuum inside the reaction chamber and the introduction of inert gas are repeated a plurality of times.

5

4. A method for judging the maintenance times of semiconductor production apparatuses that perform corrosive gas treatment in a reaction chamber by measuring the moisture concentration in the reaction chamber with a moisture meter connected to said reaction chamber when performing said corrosive gas treatment, and determining said maintenance times according to changes in said moisture concentration when corrosive gas treatment is performed repeatedly.

10

15

5. A method for judging the maintenance times of semiconductor production apparatuses according to claim 4 that determines said maintenance times according to the cumulative amount of moisture by calculating the cumulative amount of moisture that has accumulated from the previous round of maintenance and been taken into said reaction chamber based on said change in moisture concentration.

20

25

6. A method for judging the maintenance times of semiconductor production apparatuses according to claim 5 comprising measuring the pressure inside a reaction chamber with a pressure gauge connected to said reaction chamber when performing said corrosive gas treatment, and determining said

maintenance times according to said cumulative amount of moisture and the change in said pressure when corrosive gas treatment is performed repeatedly.

- 5 7. A method for judging the maintenance times of semiconductor production apparatuses according to claim 4 wherein said moisture meter is a laser moisture meter that directs laser light into a tubular cell body connected to said reaction chamber and measures the absorption spectrum of the
10 transmitted laser light.

8. A moisture monitoring apparatus equipped with a pipe, of which one end is connected to a reaction chamber into which flows corrosive gas, and a moisture meter connected to the
15 other end of said pipe that measures moisture contained in corrosive gas introduced from said reaction chamber, and which is at least provided with a pipe heating mechanism that heats said pipe.

- 20 9. A moisture monitoring apparatus according to claim 8 wherein said pipe heating mechanism is equipped with a heating wire coiled around the outside of said pipe.

10. A moisture monitoring apparatus according to claim 8
25 wherein said moisture meter is a laser moisture meter that directs laser light into a tubular cell body connected to the other end of said pipe and measures the absorption spectrum of

the transmitted laser light.

11. A moisture monitoring apparatus according to claim 10
wherein said moisture meter is equipped with a cell heating
5 mechanism that heats said tubular cell body.

12. A moisture monitoring apparatus according to claim 8
wherein said moisture meter is composed such that the
measurement sensitivity can be adjusted corresponding to the
10 temperature of the above heated corrosive gas.

α

13. A semiconductor production apparatus that allows
corrosive gas to flow onto a wafer in a reaction chamber and
reacts the corrosive gas on the surface of the wafer, and is
15 equipped with the moisture monitoring apparatus according to
claim 8.

14. A semiconductor production apparatus according to claim
13 that is equipped with a wafer transport system that
20 transports a wafer through sealed space to said reaction
chamber, said wafer transport system being equipped with a
moisture meter that measures moisture in said sealed space
separate from said moisture meter.
